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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF	:
TAKESHI WATASE, ET AL.	: EXAMINER: DUCHENEAUX, F.D.
SERIAL NO: 10/563,305	:
FILED: JANUARY 4, 2006	: GROUP ART UNIT: 1788

FOR: RESIN-COATED METAL SHEET

APPEAL BRIEF

This is an appeal to the Board of Patent Appeals and Interferences (Board) under 35 U.S.C. § 134 from the March 31, 2011, final rejections of Claims 1, 4, 5, 7, 8, 11-15, and 22-24 of Application 10/563,305, filed January 4, 2006. A Notice of Appeal was timely filed on August 1, 2011, with a one month extension of time. This Appeal Brief is timely filed no later than October 3, 2011, with no extension of time.

REAL PARTY IN INTEREST

The real party in interest in this appeal is KABUSHIKI KAISHA KOBE SEIKO SHO (KOBE STEEL, LTD.), having a mailing address of 10-26, Wakinohama-cho, 2-chome, Chuo-ku, Kobe-shi, Hyogo, JAPAN 651-8585.

RELATED APPEALS AND INTERFERENCES

Appellant/Applicant, Appellant/Applicant's legal representatives, and Appellant/Applicant's assignees, are aware of no appeals, interferences, or judicial proceedings that are related to, directly affect or would be directly affected by, or have a bearing on the decision of the Board in this appeal.

STATUS OF CLAIMS

Claims 1, 4, 5, 7, 8, 11-15, and 22-24 stand finally REJECTED.

Claims 1, 4, 5, 7, 8, 11-15, and 22-24 are APPEALED.

Claims 1, 4, 5, 7, 8, and 11-15 stand finally REJECTED under 35 U.S.C. § 112, first paragraph (written description requirement).

Claims 1, 4, and 5 stand finally REJECTED under 35 U.S.C. § 112, second paragraph (vague and indefinite).

Claims 1, 4, 7, and 8 stand finally REJECTED under 35 U.S.C. § 103 as obvious over Watase (KR 2003-0010506, published February 5, 2003) in view of Hosoe (US 2003/0094076 A1, published May 22, 2003).

Claims 11-15 stand finally REJECTED under 35 U.S.C. § 103 over Watase in view of Hosoe and Nakao (U.S. Patent 5,945,218, issued August 31, 1999).

Claims 5 and 22 stand finally REJECTED under 35 U.S.C. § 103 over Watase in view of Nagano (U.S. Patent 5,455,116, issued October 3, 1995).

Claims 23-24 stand finally REJECTED under 35 U.S.C. § 103 over Watase in view of Nagano and Nakao.

STATUS OF AMENDMENTS

No amendment has been filed and/or entered after the March 31, 2011, Office Action (OA) which finally rejected Claims 1, 4, 5, 7, 8, 11-15, and 22-24. Claims 1, 4, 5, 7, 8, 11-15, and 22-24 on appeal are reproduced in the Claims Appendix to this Appeal Brief.

However, while drafting this Appeal Brief, Applicant became aware of a typographical error which appears in the last clause "wherein the total content of the electrically conducive [sic, conductive] additive and the magnetic powder contained in the magnetic coating film is 60% or less" of both appealed Claims 1 and 5, (Claims Appendix, Claims 1 and 5). The typographical error was first entered by Applicant's Amendment filed January 6, 2011. As is apparent from the Examiner's Advisory Action mailed July 21, 2011 (AA), page 2, paragraph 1. thereof, the Examiner correctly read the last clause in each of appealed Claims 1 and 5 to read "the total content of the electrically conductive additive

and the magnetic powder contained in the magnetic coating film is 60% or less" (AA, p. 2, ¶ 1; emphasis added). Basis for the term "electrically conductive additive" in the context of appealed Claims 1 and 5 appears elsewhere in both claims and in the Specification at page 30, lines 6, 9, 14, and 18. The typographical error does not hinder and should not delay resolution of the issues in this Appeal.

SUMMARY OF CLAIMED SUBJECT MATTER

The Board will note that Claims 22-24 have not been finally rejected under 35 U.S.C. § 112, first paragraph. The Board will also note that Claims 7, 8, 11-15, and 22-24 have not been finally rejected under 35 U.S.C. § 112, second paragraph. Moreover, various independent claims stand finally rejected under 35 U.S.C. § 103 as obvious over different combinations of applied prior art. Therefore, the patentability of every one of independent Claims 1, 5, 7, 11, 14, 22, 23, and 24 over the applied prior art is separately argued and should be separately considered by Board.

Accordingly, the inventions defined by separately argued independent 1, 5, 7, 11, 14, 22, 23, and 24 are hereafter individually summarized and annotated with page and line citations to the supporting Specification. Applicant does not cite or refer to the drawings because the physical features of the claimed resin coated metal sheet are apparent from the claim language itself.

There are two distinct groups of claims associated with the applied prior art. In Group I, independent Claims 1, 7, 11, and 14 are directed to a resin coated metal sheet wherein at least one surface of a metal sheet is coated with a thin 3-50 μm electrically conductive, magnetic coating film comprising an electrically conductive additive and a magnetic powder, wherein the magnetic powder is a permalloy, and the electrically conductive additive is present in an amount of 20-40 mass%. In Group II, independent Claims 5, 22, 23, and 24 are directed to a resin coated metal sheet wherein at least one surface of a metal sheet is coated with a thin 3-15 μm electrically conductive, magnetic coating film comprising an electrically conductive additive and a magnetic powder, wherein the magnetic powder is a magnetic ferrite powder, and the electrically conductive additive is present in an amount of 20-40 mass% . The basic differences between independent Claim 1 and independent Claims 7, 11, and 14 are that Claim 1 also requires 20-40 mass% of the magnetic powder and a total content of the magnetic power and electrically conductive coating of 60% or less in the magnetic coating film while Claims 11 and 14 must meet additional component requirements, display certain physical characteristics, and possess specifically recited properties. The basic differences between independent Claim 5 and independent Claims 22, 23, and 24 are that Claim 5 also requires 20-40 mass% of the magnetic powder and a total content of the magnetic power and electrically conductive coating of 60% or less in the magnetic coating film while Claims 22, 23, and 24 must meet additional component requirements,

display certain physical characteristics, and possess specifically recited properties.

Claim 1 is directed to a resin coated metal sheet in which an electrically conductive, magnetic coating film containing 20 to 40 mass% of a magnetic powder (Spec., p. 11, ll. 13-15; p. 25, ll. 7, to p. 26, l. 5; p. 94, Table 2, Examples 15-17 and 20-24) is coated to a thickness from 3 to 50 μm at least on one surface of a metal sheet (Spec., p. 11, ll. 13-16; p. 11, ll. 25-27; p. 27, l. 20, to p. 28, l. 1), wherein

the magnetic powder is permalloy (Spec., p. 11, ll. 17-20; p. 25, l. 27, to p. 26, l. 5; p. 94, Table 2, Examples 15-17 and 20-24), and

the magnetic coating film further contains from 20 to 40 mass% of an electrically conductive additive (Spec., p. 11, ll. 22-25);

wherein the total content of the electrically conductive additive and the magnetic powder contained in the magnetic coating film is 60% or less (Spec., p. 30, ll. 2-18).

Claim 5 is directed to a resin coated metal sheet in which an electrically conductive, magnetic coating film containing 20 to 40 mass% of a magnetic powder (Spec., p. 11, ll. 13-15; p. 25, ll. 7, to p. 26, l. 5; p. 93, Table 1, Examples 1-3, 6-10, and 13) is coated to a thickness from 3 to 15 μm at least on one surface of a metal sheet (Spec., p. 11, ll. 13-16; p. 11, ll. 25-27; p. 27, l. 20, to p. 28, l. 1), wherein

the magnetic powder is soft magnetic ferrite powder (Spec., p. 11, ll. 17-20; p. 25, l. 27, to p. 26, l. 1; p. 93, Table 1, Examples 1-3, 6-10, and 13), and

the magnetic coating film further contains from 20 to 40 mass% of an electrically conductive additive (Spec., p. 11, ll. 22-25);

wherein the total content of the electrically conductive additive and the magnetic powder contained in the magnetic coating film is 60% or less (Spec., p. 30, ll. 2-18).

Claim 7 is directed to a resin coated metal sheet in which an electrically conductive, magnetic coating film containing a magnetic powder is coated to a thickness from 3 to 50 μm at least on one surface of a metal sheet (Spec., p. 11, ll. 13-16; p. 11, ll. 25-27; p. 27, l. 20, to p. 28, l. 1), wherein

the magnetic powder is permalloy (Spec., p. 11, ll. 17-20; p. 25, l. 27, to p. 26, l. 5; p. 94, Table 2, Examples 15-17 and 20-24), and

the magnetic coating film further contains from 20 to 40 mass% of an electrically conductive additive (Spec., p. 11, ll. 22-25); and

the resin coated metal sheet satisfies the following (1) or (2) and satisfies the following (3)(Spec., p. 12, l. 4, to p. 15, l. 2), where

(1) the magnetic coating film described above which is a heat releasing magnetic coating film having a heat releasing property is coated on one surface of the metal sheet and a heat releasing coating film of a thickness of 1 μm or more is coated on another surface of the metal sheet (Spec., p. 12, ll. 11-15; p. 12, l. 27, to p. 13, l. 5), at least one of the heat releasing magnetic

coating film and the heat releasing coating film contains 1 mass% or more of carbon black (Spec., p. 12, ll. 16-18; p. 13, ll. 6-8), and the coating film not containing carbon black contains 10 mass% or more of heat releasing additives other than carbon black (Spec., p. 12, ll. 19-20; p. 13, ll. 9-10);

(2) the magnetic coating film which is a heat releasing magnetic coating film having a heat releasing property is coated on both surfaces of the metal sheet, the heat releasing magnetic coating film on at least one surface containing 1 mass% or more of carbon black (Spec., p. 12, ll. 16-18; p. 13, ll. 6-8), the coating film not containing carbon black contains 10 mass% or more of heat releasing additives other than carbon black (Spec., p. 12, ll. 19-20; p. 13, ll. 9-11); and

(3) an integrated emissivity of infrared rays (wavelength: 4.5 to 15.4 μm) when heating the resin coated metal sheet to 100°C can satisfy the following formula (1):

$$a \times b \geq 0.42 \quad \ldots \quad \text{formula (1)}$$

where

a is integrated infrared ray emissivity at one surface of the resin coated metal sheet, and

b is integrated infrared ray emissivity at another surface of the resin coated metal sheet (Spec., p. 13, ll. 16-24).

Claim 11 is directed to a resin coated metal sheet in which an electrically conductive, magnetic coating film containing a magnetic powder is coated to a

thickness from 3 to 50 μm at least on one surface of a metal sheet (Spec., p. 11, ll. 13-16; p. 11, ll. 25-27; p. 27, l. 20, to p. 28, l. 1), wherein

the magnetic powder is permalloy (Spec., p. 11, ll. 17-20; p. 25, l. 27, to p. 26, l. 5; p. 94, Table 2, Examples 15-17 and 20-24), and

the magnetic coating film further contains from 20 to 40 mass% of an electrically conductive additive (Spec., p. 11, ll. 22-25); and

the resin coated metal sheet can satisfy the following (1) or (2) and satisfies the following (3) and (4)(Spec., p. 14, l. 2, to p. 16, l. 14), where

(1) one surface of the metal sheet is coated with the magnetic coating film, the magnetic coating film selectively containing black additives, and a resin coating film containing at least one of a white pigment and a luster pigment is coated selectively on the magnetic coating film containing the black additives (Spec., p. 15, ll. 11-16), and

another surface of the metal sheet is coated with a black coating film containing black additives and a resin coating film containing at least one of a white pigment and a luster pigment (Spec., p. 15, ll. 17-20);

(2) both surfaces of the metal sheet are coated each with the magnetic coating film, the magnetic coating on at least one surface is a black magnetic coating film containing black additives, a resin coating film comprising at least one of a white pigment and a luster pigment is coated on the black magnetic coating film, and another surface is selectively coated with a

resin coating film containing at least one of a white pigment and a luster pigment (Spec., p. 15, l. 11, to p. 16, l. 2);

(3) a thickness of each of the resin coating films is from 0.5 to 10 μm and an addition amount of the white pigment and the luster pigment contained in each of the resin coating films is from 1 to 25 mass% in total (Spec., p. 16, ll. 3-6); and

(4) a color of a resin coated metal sheet with addition of a white pigment and a luster pigment can satisfy an L value from 44.0 to 60.0 as measured by a color difference meter (SZS-Σ90) manufactured by Nippon Denshoku Industries Co., Ltd (Spec., p. 16, ll. 7-11).

Claim 14 is directed to a resin coated metal sheet in which an electrically conductive, magnetic coating film containing a magnetic powder is coated to a thickness from 3 to 50 μm at least on one surface of a metal sheet (Spec., p. 11, ll. 13-16; p. 11, ll. 25-27; p. 27, l. 20, to p. 28, l. 1), wherein

the magnetic powder is permalloy (Spec., p. 11, ll. 17-20; p. 25, l. 27, to p. 26, l. 5; p. 94, Table 2, Examples 15-17 and 20-24), and

the magnetic coating film further contains from 20 to 40 mass% of an electrically conductive additive (Spec., p. 11, ll. 22-25); and

the resin coated metal sheet can satisfy the following (1) or (2) and satisfies the following (3) to (5)(Spec., p. 16, l. 15, to p. 20, l. 17), where

(1) one surface of the metal sheet is coated with the magnetic coating film which is a heat releasing magnetic coating film having a heat

releasing property, the heat releasing magnetic coating film selectively contains black additives and, a resin coating film containing at least one of a white pigment and a luster pigment is further coated selectively, another surface of the metal sheet is coated with a heat releasing coating film of 1 μm or more and a resin coating film containing at least one of a white pigment and a luster pigment, at least one of the heat releasing magnetic coating film and the heat releasing coating film contains 1 mass% or more of carbon black, and a surface not containing carbon black contains 10 mass% or more of heat releasing additives (Spec., p. 16, l. 16, to p. 17, l. 25);

(2) both surfaces of the metal sheet are coated with the magnetic coating film which is a heat releasing magnetic coating film having a heat releasing property, at least one surface of the heat releasing magnetic coating film contains 1 mass% or more of carbon black, and a surface not containing carbon black contains 10 mass% or more of heat releasing additives, and a resin coating film containing at least one of a white pigment and a luster pigment is coated further over the heat releasing magnetic coating film on at least one surface (Spec., p. 16, l. 16, to p. 18, l. 4);

(3) an integrated emissivity of infrared rays (wavelength: 4.5 to 15.4 μm) when heating the resin coated metal sheet to 100°C can satisfy the following formula (1):

$$a \times b \geq 0.42 \quad \ldots \quad \text{formula (1)}$$

where

a is integrated infrared ray emissivity at one surface of the resin coated metal sheet, and

b is integrated infrared ray emissivity at another surface of the resin coated metal sheet (Spec., p. 18, ll. 5-18);

(4) a thickness of the resin coating film is from 0.5 to 10 μm, and an addition amount of the white pigment and the luster pigment contained in the resin coating film is from 1 to 25 mass% in total (Spec., p. 18, ll. 19-22); and

(5) a color of a resin coated metal sheet with addition of a white pigment and a luster pigment can satisfy an L value from 44.0 to 60.0 as measured by a color difference meter (SZS-Σ90) manufactured by Nippon Denshoku Industries Co., Ltd (Spec., p. 18, ll. 19-23).

Claim 22 is directed to a resin coated metal sheet in which an electrically conductive, magnetic coating film containing a magnetic powder (Spec., p. 11, ll. 13-15; p. 25, ll. 7, to p. 26, l. 5; p. 93, Table 1, Examples 1-3, 6-10, and 13) is coated to a thickness from 3 to 15 μm at least on one surface of a metal sheet (Spec., p. 11, ll. 13-16; p. 11, ll. 25-27; p. 27, l. 20, to p. 28, l. 1), wherein

the magnetic powder is soft magnetic ferrite powder (Spec., p. 11, ll. 17-20; p. 25, l. 27, to p. 26, l. 1; p. 93, Table 1, Examples 1-3, 6-10, and 13);

the magnetic coating film further contains from 20 to 40 mass% of an electrically conductive additive (Spec., p. 11, ll. 22-25); and

the resin coated metal sheet satisfies the following (1) or (2) and satisfies the following (3)(Spec., p. 12, l. 4, to p. 15, l. 2), where

(1) the magnetic coating film described above which is a heat releasing magnetic coating film having a heat releasing property is coated on one surface of the metal sheet and a heat releasing coating film of a thickness of 1 μm or more is coated on another surface of the metal sheet (Spec., p. 12, ll. 11-15; p. 12, l. 27, to p. 13, l. 5), at least one of the heat releasing magnetic coating film and the heat releasing coating film contains 1 mass% or more of carbon black (Spec., p. 12, ll. 16-18; p. 13, ll. 6-8), and the coating film not containing carbon black contains 10 mass% or more of heat releasing additives other than carbon black (Spec., p. 12, ll. 19-20; p. 13, ll. 9-11);

(2) the magnetic coating film which is a heat releasing magnetic coating film having a heat releasing property is coated on both surfaces of the metal sheet, the heat releasing magnetic coating film on at least one surface containing 1 mass% or more of carbon black (Spec., p. 12, ll. 16-18; p. 13, ll. 6-8), the coating film not containing carbon black contains 10 mass% or more of heat releasing additives other than carbon black (Spec., p. 12, ll. 19-20; p. 13, ll. 9-11); and

(3) an integrated emissivity of infrared rays (wavelength: 4.5 to 15.4 μm) when heating the resin coated metal sheet to 100°C can satisfy the following formula (1):

$$a \times b \geq 0.42 \quad \ldots \quad \text{formula (1)}$$

where

a is integrated infrared ray emissivity at one surface of the resin coated metal sheet, and

b is integrated infrared ray emissivity at another surface of the resin coated metal sheet (Spec., p. 13, ll. 16-24).

Claim 23 is directed to a resin coated metal sheet in which an electrically conductive, magnetic coating film containing a magnetic powder (Spec., p. 11, ll. 13-15; p. 25, ll. 7, to p. 26, l. 5; p. 93, Table 1, Examples 1-3, 6-10, and 13) is coated to a thickness from 3 to 15 μm at least on one surface of a metal sheet (Spec., p. 11, ll. 13-16; p. 11, ll. 25-27; p. 27, l. 20, to p. 28, l. 1), wherein

the magnetic powder is soft magnetic ferrite powder (Spec., p. 11, ll. 17-20; p. 25, l. 27, to p. 26, l. 1; p. 93, Table 1, Examples 1-3, 6-10, and 13);

the magnetic coating film further contains from 20 to 40 mass% of an electrically conductive additive (Spec., p. 11, ll. 22-25); and

the resin coated metal sheet can satisfy the following (1) or (2) and satisfies the following (3) and (4)(Spec., p. 14, l. 2, to p. 16, l. 14), where

(1) one surface of the metal sheet is coated with the magnetic coating film, the magnetic coating film selectively containing black additives, and a resin coating film containing at least one of a white pigment and a luster pigment is coated selectively on the magnetic coating film containing the black additives (Spec., ll. 11-16), and

another surface of the metal sheet is coated with a black coating film containing black additives and a resin coating film containing at least one of a white pigment and a luster pigment (Spec., p. 15, ll. 17-20);

(2) both surfaces of the metal sheet are coated each with the magnetic coating film, the magnetic coating on at least one surface is a black magnetic coating film containing black additives, a resin coating film comprising at least one of a white pigment and a luster pigment is coated on the black magnetic coating film, and another surface is selectively coated with a resin coating film containing at least one of a white pigment and a luster pigment (Spec., p. 15, l. 11, to p. 16, l. 2);

(3) a thickness of each of the resin coating films is from 0.5 to 10 μm and an addition amount of the white pigment and the luster pigment contained in each of the resin coating films is from 1 to 25 mass% in total (Spec., p. 16, ll. 3-6); and

(4) a color of a resin coated metal sheet with addition of a white pigment and a luster pigment can satisfy an L value from 44.0 to 60.0 as measured by a color difference meter (SZS-Σ90) manufactured by Nippon Denshoku Industries Co., Ltd (Spec., p. 16, ll. 7-11).

Claim 24 is directed to a resin coated metal sheet in which an electrically conductive magnetic coating film containing a magnetic powder (Spec., p. 11, ll. 13-15; p. 25, ll. 7, to p. 26, l. 5; p. 93, Table 1, Examples 1-3, 6-10, and 13) is

coated to a thickness from 3 to 15 μm at least on one surface of a metal sheet (Spec., p. 11, ll. 13-16; p. 11, ll. 25-27; p. 27, l. 20, to p. 28, l. 1), wherein

the magnetic powder is soft magnetic ferrite powder (Spec., p. 11, ll. 17-20; p. 25, l. 27, to p. 26, l. 1; p. 93, Table 1, Examples 1-3, 6-10, and 13);

the magnetic coating film further contains from 20 to 40 mass% of an electrically conductive additive (Spec., p. 11, ll. 22-25); and

the resin coated metal sheet can satisfy the following (1) or (2) and satisfies the following (3) to (5)(Spec., p. 16, l. 15, to p. 20, l. 17), where

(1) one surface of the metal sheet is coated with the magnetic coating film which is a heat releasing magnetic coating film having a heat releasing property, the heat releasing magnetic coating film selectively contains black additives and, a resin coating film containing at least one of a white pigment and a luster pigment is further coated selectively, another surface of the metal sheet is coated with a heat releasing coating film of 1 μm or more and a resin coating film containing at least one of a white pigment and a luster pigment, at least one of the heat releasing magnetic coating film and the heat releasing coating film contains 1 mass% or more of carbon black, and a surface not containing carbon black contains 10 mass% or more of heat releasing additives (Spec., p. 16, l. 16, to p. 17, l. 25);

(2) both surfaces of the metal sheet are coated with the magnetic coating film which is a heat releasing magnetic coating film having a heat releasing property, at least one surface of the heat releasing magnetic coating

film contains 1 mass% or more of carbon black, and a surface not containing carbon black contains 10 mass% or more of heat releasing additives, and a resin coating film containing at least one of a white pigment and a luster pigment is coated further over the heat releasing magnetic coating film on at least one surface (Spec., p. 16, l. 16, to p. 18, l. 4);

(3) an integrated emissivity of infrared rays (wavelength: 4.5 to 15.4 μm) when heating the resin coated metal sheet to 100°C can satisfy the following formula (1):

$$a \times b \geq 0.42 \quad \ldots \quad \text{formula (1)}$$

where

a is integrated infrared ray emissivity at one surface of the resin coated metal sheet, and

b is integrated infrared ray emissivity at another surface of the resin coated metal sheet (Spec., p. 18, ll. 5-18);

(4) a thickness of the resin coating film is from 0.5 to 10 μm, and an addition amount of the white pigment and the luster pigment contained in the resin coating film is from 1 to 25 mass% in total (Spec., p. 18, ll. 5-18); and

(5) a color of a resin coated metal sheet with addition of a white pigment and a luster pigment can satisfy an L value from 44.0 to 60.0 as measured by a color difference meter (SZS-Σ90) manufactured by Nippon Denshoku Industries Co., Ltd (Spec., p. 18, ll. 19-23).

GROUNDS OF REJECTION TO BE REVIEWED

The final rejections of Claims 1, 4, 5, 7, 8, and 11-15 under 35 U.S.C. § 112, first paragraph, are based on clearly erroneous findings that the claimed resin coated metal sheet was not reasonably described in the Specification as originally filed and should be reversed.

The final rejections of Claims 1, 4, and 5 under 35 U.S.C. § 112, second paragraph, are based on erroneous conclusions that the claimed resin coated metal sheet does not particularly point out and distinctly claim Applicant's invention and should be reversed..

The final rejections of Claims 1, 4, 7, and 8 under 35 U.S.C. § 103 as obvious over Watase (KR 2003-0010506, published February 5, 2003) in view of Hosoe (US 2003/0094076 A1, published May 22, 2003) are erroneous and should be reversed.

The final rejections of Claims 11-15 under 35 U.S.C. § 103 over Watase in view of Hosoe and Nakao (U.S. Patent 5,945,218, issued August 31, 1999) are erroneous and should be reversed.

The final rejections of Claims 5 and 22 under 35 U.S.C. § 103 over Watase in view of Nagano (U.S. Patent 5,455,116, issued October 3, 1995) are erroneous and should be reversed.

The final rejections of Claims 23-24 under 35 U.S.C. § 103 over Watase in view of Nagano and Nakao are erroneous and should be reversed.

ARGUMENT

1. The Examiner clearly erred rejecting Claims 1, 4, 7, 8, and 11-15 under 35 U.S.C. § 112, 1st ¶ (written description)

The rejections of Claims 1, 4, 7, 8, and 11-15 under 35 U.S.C. § 112, first paragraph, for non-compliance with the written description requirement are clearly erroneous.

Applicant believes the Examiner's inability to find an adequate written description in the supporting Specification for the limitations in independent Claims 1, 5, 7. 11, and 14, and his unreasonable interpretation that "'the total content of the electrically conductive additive and the magnetic powder of 60% or less' provides for a magnetic coating that contains none (0%) of either or both of the claimed additive and magnetic powder, which is contradiction to the 20 to 40 mass % concurrently claimed for the said additive and said powder" (AA, p. 2, ¶ 1) in Claims 1, 4, and 5, both stem at least in part from the fact that the term "magnetic powder" employed in the claims is defined in the Specification as including both the "permalloy" of Claim 1 and the "soft magnetic ferrite powder" component of Claim 5.

For example, the Specification teaches (Spec., p. 25, ll. 7-13):

> (I-1) Magnetic powder contained by 20 to 60% in magnetic coating film
>
> The magnetic powder (microwave absorbing additive) used in the invention has no particular restriction and can include, typically, soft magnetic ferrite powder and magnetic metal powder, which may be used alone or two or more of them may be used in combination.

Thereafter, the Specification teaches (Spec., p. 25, l. 27, to p. 26, l. 5):

> Among the magnetic powders, the soft magnetic ferrite powder can include, for example, soft magnetic Ni-Zn based ferrite powder and Mn-Zn powder.
>
> Further, the magnetic metal powder can include, for example, permalloy (Ni-Fe based alloy with Ni content of 35% or more) and sendust . . . .

Understanding that "magnetic powder" refers to both a soft magnetic ferrite powder and a magnetic metal powder such as permalloy is important because the Specification at times generally refers to the content of "magnetic powder" in the magnetic coating film and at times specifically refers to the content of a magnetic metal powder such as permalloy in the magnetic coating film.

The Specification generally teaches (Spec., p. 11, ll. 13-15), "This is a coated sheet in which a magnetic coating film containing 20 to 60% of a magnetic powder ("%" means herein "mass%" . . .)[is applied] ." From that teaching, the ordinary artisan would have understood that the magnetic coating film may include 20 to 60% of a magnetic metal powder such as permalloy. The Specification also teaches (Spec., p. 11, l. 22, to p. 12, l. 2):

> In the coated metal sheet according to the invention, an electrically conductive additive can be added further by about 20 to 40% in the magnetic coating film . . . . Further, when the electrically conductive additive is added, the total content of the electrically conductive additive and the magnetic powder is preferably form 30 to 60%.

From that combination of teachings, the ordinary artisans reasonably would have understood that 20% of a magnetic powder may be added when the content of electrically conductive additive is 40%, and 40% of a magnetic powder may

be added when the content of electrically conductive additive is 20%. The "magnetic powder" includes a magnetic metal powder such as permalloy (Spec., p. 25, ll. 7-13).

Thereafter, the Specification teaches (Spec., p. 29, ll. 15-17), "Generally, the addition amount of the electrically conductive additive is preferably from 20 to 40% in the magnetic film . . . ." Then, the Specification teaches (Spec., p. 29, l. 25, to p. 30, l. 7):

> [I]n the case of using the magnetic metal powder[, e.g., permalloy,] for the magnetic powder, since it has the electrical conductivity of itself, it is preferably added in an amount as less as possible (for example 30% or less) within the range described above (20 to 40%).
>
> On the other hand, considering that the electrically conductive additive may have a worry of giving undesired effects on the workability or the like in the same manner as the magnetic powder, the total content of the electrically conductive additive and the magnetic powder contained in the magnetic coating film is preferably 60% or less.

At page 30, lines 8-18, the Specification refers to the preferred amounts when the magnetic powder is either a soft magnetic ferrite powder or a magnetic metal powder such as permalloy (emphasis added):

> [W]hen the soft magnetic ferrite powder is used as the magnetic powder, it is preferred that the content of the ferrite powder is about 20 to 40% and the content of the electrically conductive additive is from 20 to 40% (60% or less in total) and, on the other hand, when the magnetic metal powder is used as the magnetic powder, it is preferred that the content is about 30 to 50% and the content of the electrically conductive additive is from 10 to 30% (60% or less in total).

Moreover, the working examples in Table 1 (Spec., p. 93, for soft magnetic ferrite powder) and in Table 2 (Spec., p. 94, for permalloy) reasonably would

have informed the artisan that the contents of the magnetic metal powder such as permalloy in Applicant's inventive electrically conductive, magnetic coating film is not at all limited to 30 to 50%. See Applicant's Table 2, Example 20.

Accordingly, the Examiner's finding that the magnetic powder content of 20 to 40% when the magnetic powder is permalloy reasonably is not described in the Applicant's original Specification is clearly erroneous.

Additionally, specifically referring to the teaching in the Specification at pages 11-12, bridging paragraph (Office Action dated March 31, 2011 (OA), page 3, third full paragraph), the Examiner finds no support for the magnetic coating film thickness of 3 to 50 μm in independent Claims 1, 7, 11, and 14, because the Specification invariably teaches that the magnetic coating film must be coated to a thickness of 3 to 15 μm when the content of the electrically conductive additive in the magnetic coating film is 20 to 40%. That this additional finding by the Examiner is clearly erroneous is evident on its face from the disclosure in the Specification at the same page 11, lines 13-16:

> This is a coated sheet in which a magnetic coating film containing 20 to 60% of a magnetic powder ("%" means herein "mass%" unless otherwise specified) is coated on at least one surface of the steel sheet to a thickness of 3 to 50 μm.

At page 27, lines 21-22. the Specification generally teaches, "Further, in the invention, the thickness of the magnetic coating film is defined as 3 to 50 μm."

Moreover, the specific teaching upon which the Examiner relies does not state that the magnetic coating film must be coated to a thickness of 3 to 15 μm

when the content of the electrically conductive additive in the magnetic coating film is 20 to 40%. Rather, the Specification teaches (Spec., p. 11, l. 22, to p. 12, l. 2; emphasis added):

> In the coated metal sheet according to the invention, an electrically conductive additive can be added further by about 20 to 40% in the magnetic coating film to provide the magnetic coating film with electrical conductivity. In this case, the film thickness is preferably from 3 to 15 μm for maintaining good electrical conductivity. Further, when the electrically conductive additive is added, the total content of the electrically conductive additive and the magnetic powder is preferably form 30 to 60%.

The Examiner appears to have forgotten the Specification's additional teaching (Spec., p. 29, l. 25, to p. 30, l. 7):

> [I]n the case of using the magnetic metal powder[, e.g., permalloy,] for the magnetic powder, since it has the electrical conductivity of itself, it is preferably added in an amount as less as possible (for example 30% or less) within the range described above (20 to 40%).

Thus, when a magnetic metal powder such as permalloy, which itself has electrical conductivity, is included in the magnetic coating film, it is not necessary to limit the film thickness to 3 to 15 μm in order to maintain good electrical conductivity. Therefore, the Specification expressly states (Spec., p. 27, l. 20, to p. 28, l. 1; emphasis added):

> (I-2) Magnetic coating film thickness of 3 to 50 μm
>
> Further, in the invention, the thickness of the magnetic coating film is defined as 3 to 50 μm. In a case where the film thickness is less than 3 μm or more than 50 μm, the bendability, the film adhesion and the corrosion resistance are deteriorated. A preferred film thickness is generally 4 μm or more and 40 μm or less and, more preferably 5 μm or more and 30 μm or less while it may vary, for example, depending on the kind and the addition amount of the magnetic powder to be used.

In short, there appears to be no reasonable justification for the Examiner's multiple findings that the inventions of Claims 1, 4, 7-8, and 11-15 are not described in the supporting Specification as originally filed.

To satisfy the written description requirement of 35 U.S.C. § 112, first paragraph, the supporting specification must convey with reasonable clarity to persons skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991). In other words, the specification must convey with reasonable clarity that the applicant invented the subject matter claimed. Our reviewing courts have consistently instructed that compliance with the written description requirement of 35 U.S.C. § 112, first paragraph, does not require the specification to provide a description of the subject matter ultimately claimed "*in haec verba*", "*in ipsis verbis*," or in the same language as the claims. *In re Lukach*, 442 F.2d 967, 969 (CCPA 1071). Whether or not a specification satisfies the written description requirement is a question of fact. *Ralston Purina Co. v. Far-Mar-Co., Inc.*, 772 F.2d 1570, 1574-75 (Fed. Cir. 1985). How close the original description of the invention in the specification must be to the claim language in order to satisfy the written description requirement of 35 U.S.C. § 112, first paragrph, is determined on a case-by-case basis. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d at 1565. It is not necessary to describe the claim limitations exactly as claimed as long as persons having

ordinary skill in the art would have recognized from the applicant's disclosure that the invention described in the specification includes those limitations. *In re Smythe*, 480 F.2d 1376, 1382-84 (CCPA 1973).

Contrary to the Examiner's findings, Applicant's Specification does not teach that the magnetic metal powder should only be added to the magnetic coating film in the preferred amount from 30 to 50%. Applicant's Specification expressly states that a magnetic metal powder such as permalloy may be added to the magnetic coating film in an amount from 20 to 30% (Spec., pp. 29-30, bridging sentence). The Examiner's findings are clearly erroneous. The teachings of a disclosure should never be limited to the preferred embodiments and specific working examples. *In re Fracalossi*, 681 F.2d 792, 794 n.1 (CCPA 1982); *In re Mills*, 470 F.2d 649, 651 (CCPA 1972). To satisfy the written description requirement of the first paragraph of 35 U.S.C. § 112, the supporting specification need only convey with reasonable clarity to persons skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d at 1563-64, i.e., that the applicant invented the subject matter claimed.

Finally, in support of Applicant's claims, the Specification at page 64, first paragraph, teaches "a coating film may also contain a conductive filler typically represented by Ni, by which excellent conductivity can be ensured . . . [and] the lower limit for the film thickness is . . . preferably 3 μm . . . ." The

Specification also teaches at page 64, second paragraph, "It is recommended to define the upper limit for the film thickness to 50 μm . . . ."

Persons skilled in the art reasonably would have understood that Applicant's Specification describes a resin coated metal sheet in which an electrically conductive, magnetic coating film containing 20 to 40 mass% of a magnetic powder is coated to a thickness from 3 to 50 μm on at least one surface of a metal sheet, wherein the magnetic powder is permalloy, and the magnetic coating film further contains from 20 to 40 mass% of an electrically conductive additive; wherein the total content of the electrically conductive additive and the magnetic powder contained in the magnetic coating film is 60% or less. At page 27, lines 21-22, the Specification expressly states, "[I]n the invention, the thickness of the magnetic coating film is defined as 3 to 50 μm."

Therefore, for the reasons stated, the Examiner's finding that the original Specification does not provide an adequate written description of the subject matter defined by previously presented Clams 1, 7, 11, and 14 is clearly erroneous. Accordingly, the Examiner's rejections of Claims 1, 4, 7-8, and 11-15 under 35 U.S.C. § 112, first paragraph, should be reversed.

2. Examiner erred in rejecting Claims 1, 4 5 under 35 U.S.C. § 112, 2nd ¶

The Examiner rejected Claims 1, 4, and 5 under 35 U.S.C. § 112, 2nd paragraph, as vague and indefinite. The Examiner unreasonably concluded that "'the total content of the electrically conductive additive and the magnetic powder of 60% or less' [in Claims 1, 4, and 5] provides for a magnetic coating

that contains none (0%) of either or both of the claimed additive and magnetic powder, which is contradiction to the 20 to 40 mass % concurrently claimed for the said additive and said powder" (AA, p. 2, ¶ 1). The Examiner's rejections are erroneous as a matter of law.

Claims need only reasonably apprise those skilled in the art of their scope and be as precise as the subject matter permits. *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1385 (Fed. Cir. 1986). Applicant's claims include the clause "wherein the total content of the electrically conductive additive and the magnetic powder contained in the magnetic coating film is 60% or less" (Claims Appendix, Claims 1 and 5). The Board will note that the criticized clause positively states that the total content of the electrically conductive additive and the magnetic powder contained in the magnetic coating film is 60% or less. Thus, the total content of 60% or less in the magnetic coating film reasonably reasonably would have been understood to include the required content of from 20 to 40 mass% of the magnetic powder and the required content of from 20 to 40 mass% of the electrically conductive additive in the magnetic coating film. There appears to be no confusion whatsoever. The electrically conductive, magnetic coating film contains 20-40% of magnetic powder, 40-20% of electrically conductive additive, and a total content of magnetic powder and electrically conductive powder of no more than 60%. Where is the confusion?

During examination, the PTO must give the claims their broadest reasonable interpretation consistent with the supporting specification. *In re Suitco Surface, Inc.*, 603 F.3d 1255, 1259 (Fed. Cir. 2010). Thus, the PTO's interpretation of the scope and content of the claim must be reasonably consistent with the specification. The broadest reasonable construction "cannot be divorced from the specification and the record evidence." *In re NTP, Inc.*, ___ F.3d ___ (Fed. Cir. 2011). *See also In re Am. Acad. Of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cor. 2004); *In re Sneed*, 710 F.2d 1544, 1548 (Fed. Cir. 1983). Claim interpretation is a matter of law. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005)(en banc).

Read in a manner consistent with Applicant's Specification at page 30, the first two paragraphs, there would have been no misunderstanding that "the total content of the electrically conductive additive and the magnetic powder contained in the magnetic coating film is preferably 60% or less." The antecedent basis for the total content of the electrically conductive additive and the magnetic powder contained in the magnetic coating film of preferably 60% or less is apparent from the claim language itself or when properly read in light of the teaching of the Specification. Then, considering all the claim language as a whole, without disregarding the required contents of the electrically conductive additive and the magnetic powder contained in the magnetic coating film, total content of the electrically conductive additive and the magnetic powder contained in the magnetic coating film of 60% or less can only mean

that the total content of the electrically conductive additive of 20 to 40 mass% and the magnetic powder of 20 to 40 mass% in the magnetic coating film is no more than 60%. It is most unreasonable for the Examiner to interpret a coating film comprising a minimum content of electrically conductive additive of 20% and a minimum content of magnetic powder of 20% to encompass compositions comprising a minimum content of electrically conductive additive of 0% and/or a minimum content of magnetic powder of 0%. The Examiner's rejections therefore should be reversed.

3. Erroneous rejections of Claims 1, 4, 7, and 8 under 35 U.S.C. § 103 over Watase and Hosoe

The Examiner erred rejecting Claims 1, 4, 7, and 8 under 35 U.S.C. § 103 over Watase in view of Hosoe. The Examiner's final rejections should be reversed.

The Examiner found that Watase discloses a metal sheet coated with a heat dissipating coating film containing a heat conductive filler and having a thickness of 10 μm (OA, p. 5). The Examiner found that the heat dissipating or heat conductive coating film may additionally contain an electrically conductive filler (OA, p. 5). Thus, the Examiner found that Watase's heat dissipating coating film may comprise (1) a polyester resin, (2) a heat conductive filler, and (3) 10-50% of an electrically conductive filler such as Ni (OA, p. 5).

The Examiner acknowledged, however (OA, p. 5, last sentence), "Watase is silent to a further magnetic powder, which said magnetic powder is a

permalloy." To remedy Watase's deficiencies, the Examiner relies upon Hosoe's disclosure.

Hosoe describes alloy coatings which comprise a binder and fine magnetic permalloy particles having an extremely small particle size dispersed therein for use in coating molded objects in order to shield molded objects from electromagnetic radiation (Hosoe [0002; 0004-0005; 0007-0009; 0029; 0045]). Hosoe teaches that the binder may be a polyester resin (Hosoe [0046]) and that the fine magnetic permalloy particles may be dispersed in the binder in amounts from 5-95 wt.% (Hosoe [0053]) to produce the required coatings (Hosoe [0045]). Hosoe's coatings may be applied to a substrate to a coating thickness of a few dozen micrometers to approximately 100 μm (Hosoe [0054]). The lower limit on the amount of fine magnetic permalloy particles having an extremely small particle size in Hosoe's coating appears to be 30 wt.% (Hosoe [0054]).

The Examiner concluded therefrom that it would have been prima facie obvious to a person having ordinary skill in the art to add Hosoe's fine magnetic permalloy particles having an extremely small particle size to Watase's heat dissipating coating. However, the Examiner does not point to any teaching in either Watase or Hosoe to do so. Alternatively, the Examiner concludes that it would have been prima facie obvious to a person having ordinary skill in the art to add Watase's heat dissipating filler and/or electrically conductive filler in an

amount ranging from 10-50% to Hosoe's electromagnetic shielding coating, again without pointing to any teaching in either reference to do so.

Finding no teaching in the prior art for the combination, the Examiner concludes that persons having ordinary skill in the art clearly would have been motivated to mix the materials employed in Watase's coatings and the materials employed in Hosoe's coatings together in one composite coating and apply that composite coating to a metal sheet in order to provide a combination of heat dissipation properties, electrically conductive properties, and electromagnetic shielding properties. Realizing that Watase and Hosoe do not individually or in combination suggest combining their respective coating materials, the Examiner vigorously argues (AA, p. 8, 1st full ¶; emphasis added):

> Indeed, based on the delicacy of circuitry designed to be incorporated in tandem with an invention employing the coated substrate of Watase, and the potential for damage to said circuitry from surrounding EM radiation, the skilled artisan would actually be irresponsible not to contemplate the benefits of including the EM shielding material of Hosoe into the disclosed invention of Watase.

However, given Hosoe's teaching that the addition of Watase's heat dissipation materials and electrically conductive materials would detrimentally effect the electromagnetic shielding properties of its applied coatings comprising permalloy powder, the ordinary artisan would not have been as irresponsible as the Examiner suggests. The ordinary artisan would have been dissuaded by Hosoe's teaching from any reasonable expectation of benefitting from the addition of Hosoe's EM shielding material to Watase coatings or the

addition of Watase's heat dissipation materials and/or electrically conductive materials to Hosoe's coatings. Teaching away from an applicant's claimed invention is a strong indication that it would not have been obvious. *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007). The Examiner's conclusion of obviousness is inconsistent with Hosoe's teaching.

Hosoe instructs that it is important when dispersing fine electromagnetic shielding materials in a resin to use a metal powder having a very small particle size so that "the gaps between particles can be narrowed (the metal powder can be filled more densely) and, as a result, increase the shield effect" (Hosoe [0008]). Therefore, any addition of materials or material dispersing procedure which would tend to increase the gaps between the EM shielding particles and/or reduce the density of the EM shielding particles in the applied coating would decrease the shielding effect and definitely would not be desirable. Hosoe teaches that the increased density of the fine electromagnetic shielding materials in a coated resin is most important when the thickness of the film is 100 μm or less (Hosoe [0009; 0054]).

To achieve the desired EM shielding effect, Hosoe invented a new process for producing fine alloy powders utilizing a trivalent titanium compound and a complexing agent to facilitate simultaneous deposition of the two metals which form fine permalloy particles having the desired particle size of 1-100 nm (Hosoe, Claims 1-4). Hosoe expressly states (Hosoe [0014]),

"[T]he alloy powder thus formed can be made 1 to 100 nm, in other words, extremely small in particle size, high in purity, and uniform in composition."

Moreover, Hosoe teaches that any and all prior art procedures and additives which would tend to decrease the uniformity of the alloy composition in the alloy powder and reduce the uniformity of its dispersion in a coating composition is undesirable (Hosoe [0069]). Accordingly, Hosoe would have taught persons having ordinary skill in the art that the addition of materials which would promote aggregation of the permalloy fines and necessarily decrease the uniformity and density of the dispersion in its electromagnetic shielding coating film is undesirable. Moreover, Hosoe reasonably would have taught persons having ordinary skill in the art that the addition of fine permalloy particles to heat dissipating coatings containing substantial amounts of heat dissipating fillers and 10-50% of electrically conductive fillers such that a uniform, high density dispersion of fine permalloy particles cannot be achieved would provide no beneficial electromagnetic shielding properties and defeat the purpose for the addition of the fine permalloy particles. In fact, Hosoe reasonably suggests that the combination of electrically conductive fillers and fine EM shielding particles in a coating would be a waste of materials and effort.

Persons having ordinary skill in the art also reasonably would have expected that Hosoe's fine permalloy particles could not be adequately and uniformly dispersed at the density required to satisfactorily affect

electromagnetic shielding in any heat dissipating composition disclosed by Watase which already contains substantial amounts of heat conductive filler and substantial amounts of electrically conductive filler. Persons having ordinary skill in the art reasonably would have expected that Watase's heat conductive filler and/or electrically conductive filler could not be added to Hosoe's coatings comprising fine permalloy particles without detrimentally affecting the uniformity of dispersion and the density the fine permalloy particles require to adequately affect electromagnetic shielding.

To sustain a rejection for obviousness, the prior art must reasonably suggest the claimed composition and enable one skilled in the art to make and use the claimed composition with reasonable expectation of success. *In re O'Farrell*, 853 F.2d 894, 903 (Fed. Cir. 1988); *In re Hoeksema*, 399 F.2d 269, 274 (CCPA 1968). Moreover, the prior art must lead the person having ordinary skill in the art to reasonably expect that the claimed subject matter could be successfully made and used without undue experimentation. *In re O'Farrell*, 853 F.2d 894, 903 (Fed. Cir. 1988); *In re Dow Chemical Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988); *Merck & Co., v. Biochraft Laboratories, Inc.*, 874 F. 2d 804, 809 (Fed. Cir.1989). The combined prior art relied upon by the Examiner provides no more than an invitation to experiment without any reasonable expectation of success. A conclusion of obviousness requires some motivation, incentive, suggestion, or teaching to do what Applicant has done. *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 416-418 (2007).

"Obvious to try" is not itself sufficient support for a conclusion of obviousness under 35 U.S.C. § 103. *In re Deuel*, 51 F.3d 1552, 1559 (Fed. Cir. 1985).

According to the Examiner, Watase also suggests adding carbon black having an average particle diameter of 5-100 nm in amounts greater than 3% to coatings which already contain substantial amounts of heat conductive filler and electroconductive filler (OA, p. 7). In view of Hosoe's teachings to maximize the density of, and reduce the gaps between the fine permalloy particles in its EM shielding coatings, it is difficult to comprehend why it would have been prima facie obvious to add Hosoe's fine permalloy particles to any Watase coating comprising substantial amounts of heat conductive filler, substantial amounts of electroconductive filler, and substantial amounts of carbon black without narrowing the gaps between Hosoe's fine permalloy particles, without decreasing the density of the fine permalloy particles in the coating, and without detrimentally affecting the electromagnetic shielding effects Hosoe requires. Applicant respectfully suggests that persons having ordinary skill in the art reasonably would not have done what the Examiner alone suggests with any reasonable expectation of success. To the contrary, the ordinary artisan reasonably would have expected to dilute or compromise the desired effects of each and every component in the new coating.

The prior art, considered as a whole, reasonably would have taught persons having ordinary skill in the art not to do what Applicant has done. The artisan reasonably would not have combined components in order to

compromise the effects of each. The rejections of Claims 1, 4, 7, and 8 as obvious in view of the combined teachings of Watase and Hosoe should be reversed.

4. The Examiner erred in rejecting Claims 11-15 under 35 U.S.C. § 103 in view of Watase, Hosoe, and Nakao

The Examiner also erred in maintaining the rejections of Claims 11-15 under 35 U.S.C. § 103 in view of the combined teachings of Watase, Hosoe and Nakao. To sustain the conclusion that Claims 11-15 would have been obvious over the combined prior art, the Examiner must rely on the additional teachings in Nakao (OA, pp. 8-15). According to the Examiner, Nakao would have taught persons having ordinary skill in the art to apply a coating containing a white pigment such as titanium dioxide to a multilayer substrate in order to improve surface gloss, smoothness, chipping resistance, etc. (OA, p. 10, last ¶). Thus, the Examiner suggests that persons having ordinary skill in the art reasonably would have wanted to add a white pigment such as titanium dioxide to a coating comprising substantial amounts of heat conductive filler, substantial amounts of electrically conductive filler, substantial amounts of fine permalloy particles, and optionally substantial amounts of carbon black, in order to improve the surface gloss, smoothness, and chipping resistance of the applied coating film without considering the affects the added white pigment would have on the density and uniform distribution of the fine permalloy particles and the electromagnetic shielding properties of the coating film and without considering

the affects the added white pigment would have on any of the other properties Watase requires of its coatings.

Nakao appears to apply a coating of white pigment to an underlayer for benefits which are unrelated to heat dissipation coatings, electrically conductive coatings, and electromagnetic shielding coatings. Moreover, the addition of a white pigment appears to be inconsistent with the addition of carbon black to the same coating. The Examiner not only suggests that the composite coating of Applicant's claims would have been obvious to a person having ordinary skill in the art, but the Examiner unreasonably suggests that the ordinary artisan would modify the prior art coatings to achieve nonessential benefits without knowing if or how the modification would affect the essential benefits the prior art requires. Skilled artisans do not haphazardly modify prior art coatings. "The normal desire of scientists or artisans is to improve upon what is already generally known . . . ." *In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003).

This Board instructed in *Ex parte Tanksley*, 37 USPQ2d 1382, 1386 (Bd. Pat. App. & Int. 1994):

> With respect to the rejections under 35 U.S.C. § 103, we find that the cited prior art provides no suggestion which would have led a person having ordinary skill from "here to there," . . . . We have no doubt that the prior art could be modified in such a manner to arrive at appellants' . . . [invention]. The mere fact, however, that the prior art could be modified would not have made the modification obvious unless the prior art suggests the desirability of the modification. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) . . . .

Quoting from *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), the Supreme Court stated in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 418-419 (2007):

> [R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.
>
> . . . . .
>
> [A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. . . . [I]t can be important to identify a reason that would have prompted a person having ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.

Invitations to experiment with, and obviousness to try, combinations of prior art materials without any prior knowledge of the outcome or consequences of the combinations is not the suggestion to act with reasonable expectation of success that is required to sustain a conclusion of obviousness. *In re O'Farrell*, 853 F.2d 894, 903 (Fed. Cir. 1988); *In re Dow Chemical Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988); *Merck & Co., v. Biochraft Laboratories, Inc.*, 874 F. 2d 804, 809 (Fed. Cir. 1989). The Examiner's rejections based on the combined teachings of Watase, Hosoe, and Nakao should be reversed.

5. The Examiner erred in rejecting Claims 5 and 22-24 under 35 U.S.C. § 103 in view of Watase, Nagano, and Nakao

A. Rejections of Claims 5 and 22 over Watase in view of Nagano

The Examiner erred in rejecting Claims 5 and 22 under 35 U.S.C. § 103 over Watase in view of Nagano (U.S. Patent 5,455,116, issued October 3, 1995)(OA, pp. 15-19). The rejections should be reversed.

Again, the Examiner found that Watase discloses a metal sheet coated with a heat dissipating coating film containing a heat conductive filler and having a thickness of 10 μm (OA, p. 15). The Examiner reiterated that Watase's heat dissipating or heat conductive coating film may also contain an electrically conductive filler (OA, p. 16). Thus, Watase's heat dissipating coating film may comprise a polyester resin, a heat dissapating filler, and from 10-50% of an electrically conductive filler such as Ni (OA, p. 16). However, the Examiner acknowledges (OA, p. 5, last sentence), "Watase is silent to a magnetic powder being a soft magnetic ferrite powder and a total content of the electrically conductive additive and magnetic powder is from 30-60 mass %." To remedy Watase's deficiencies, the Examiner relies upon Nagano's disclosure.

Finally rejected Claim 5 is directed to an electrically conductive, magnetic coating film coated to a thickness of 3-15 μm which contains 20-40 mass% of a soft magnetic ferrite powder and 20-40 mass% of an electrically conductive additive, wherein the total content of the electrically conductive

additive and the magnetic powder in the magnetic coating film is 60% or less. Claims 5 and Claims 22-24 all require 20-40 mass% of an electrically conductive additive in any electrically conductive, magnetic coating film coated on the claimed resin coated metal sheet.

The Examiner finds that Nagano teaches an electromagnetic wave reflection-preventing material comprising a resinous (polyester resin) layer containing a ferrite electromagnetic absorber and an electrically conductive metal or metal oxide powder (OA, p. 16). The Examiner acknowledges, however, that the electrically conductive powder is present in Nagano's resinous (polyester resin) layer in a total amount less than 20 parts by weight (Nagano, col. 4, ll. 29-31 and 38-43). Nagano expressly states (Nagano, col. 4, ll. 38-43; emphasis added):

> When the mixture of ferrite with at least one of carbon, metal powder and electrically conductive metallic oxide, used, in the range of 3 to 200 parts by weight in total, a total amount of carbon, metal powder and electrically conductive metallic oxide being less than 20 parts by weight.

Nevertheless, the Examiner finds "that the amount of the electrically conductive metal powder as taught by Nagano share[s] an endpoint with that presently claimed and that the only deficiency of Nagano . . . is that Nagano . . . disclose[s] the use of less than 20% mass metal powder, while the present claims require 20 to 40% mass conductive additive" (OA, p. 16). To the contrary, the amount of the electrically conductive powder as taught by Nagano does NOT share an endpoint with the presently claimed electrically conductive,

magnetic coating film. Nagano's less than 20 mass% electrically conductive additive does not overlap or touch Applicant's required 20 to 40 mass% of electrically conductive additive.

To sustain the alleged case for obviousness, however, the Examiner relies on his finding that the amounts are "so close to each other" that a conclusion of obviousness is justified (OA, pp. 16-17, bridging ¶). The Examiner cited *Titanium Metals Corporation of America v. Banner*, 227 USPQ 773 (Fed. Cir. 1985), for the proposition that "close" is sufficient to sustain a conclusion of obviousness. Applicant pointed to the contrary view expressed by the Board in *Ex parte SUSUMU TANAKA and Yasuo Murakami*, Appeal 2007-3845, decided March 28, 2008 (Evidence Appendix, Other Evidence). There, the Board found that "close enough" was not sufficient to support a conclusion obviousness where the prior art instructs not to exceed a specific range. Here, Nagano instructs that a resin layer having acceptable electromagnetic wave reflection-preventing properties contains "less than 20 parts by weight" of an electrically conductive material.

In *Ex parte SUSUMU TANAKA and Yasuo Murakami*, Appeal 2007-3845, decided March 28, 2008 (Evidence Appendix, Other Evidence), the Board reversed an examiner's conclusion of obviousness justified by a "close enough" argument based on *Titanium Metals Corporation of America v. Banner, supra*, for the following reasons (*Tanaka Decision*, pp. 4-5; emphasis added):

> The Examiner recognizes that JP'740 teaches a steel alloy having 0.5%-.9% C. However, relying on MPEP §2144.05 and *Titanium Metal Corp. of America v. Banner*, 778 F.2d 775 (Fed. Cir. 1985), the Examiner then asserts that the 0.9% C is close enough to the claimed 0.95% carbon that there is prima facie obviousness. However, as discussed above, JP'740 teaches a carbon content which is entirely outside of the claimed range and specifically warns against exceeding the upper limitation of 0.9% C due to the materially different property expected by one of ordinary skill in the art. In other words, contrary to the Examiner's assertion, JP'740 teaches that the inclusion of greater than 0.9% carbon does not expect to produce a steel alloy having *the same properties* as a steel alloy having 0.5% to 0.9% carbon as required by *Titanium Metal Corp. of America*. As such, a person of ordinary skill in the art following the teachings of JP'740 would not have been motivated to utilize steel comprising carbon exceeding the upper limitation of 0.9% in the disclosed method. Therefore, we agree with Appellants that prima facie obviousness has not been established on the present record . . . .

The Examiner declined to follow the Board's *Tanaka Decision* because Applicant's Specification does not expressly teach that 20-40 mass% of electrically conductive additive is "critical" (OA, p. 17, 1st full ¶). Nevertheless, a range of 20-40 mass% for the electrically conductive additive in Applicant's electrically conductive magnetic coating is "preferred" throughout Applicant's Specification (Spec., pp. 29-30; original Claim 5; and p. 93, Table 1, Examples 6-10). Applicant may claim a resin coated metal sheet coated with an electrically conductive magnetic coating film containing a preferred amount of electrically conductive additive just as the prior art excludes that amount of electrically conductive additive from functionally effective electrically conductive magnetic coating film coating films.

The Examiner repeatedly states that 20-40 mass% of electrically conductive additive is not "critical" to the invention Applicant claims.

However, whether or not Applicant's Specification teaches that 20-40 mass% of electrically conductive additive is critical to produce an electrically conductive, magnetic coating film having some marginal effect, the criticality of Applicant's preferred range of 20-40 mass% of electrically conductive additive is irrelevant to the question on appeal. The question on appeal is whether the PTO has met its initial burden of proof to establish that the claimed invention would have been obvious to a person having ordinary skill in the art under 35 U.S.C. § 103 in view of the prior art teachings. Applicant's Claims 5 and 22-24 all require 20-40 mass% of the electrically conductive additive. As the Examiner acknowledges, Nagano would have taught persons having ordinary skill in the art to limit the content of an electrically conductive additive in a coating film containing soft magnetic ferrite powder to less than 20 parts by weight per 100 parts by weight of binder (Nagano, col. 4, ll. 29-31 and 38-42). Moreover, it carbon and metal powder are also present, the amount of electrically conductive additive in the coating film containing soft magnetic ferrite powder would be substantially less. Nagano's less than 20 parts refers to the total amount of carbon, metal powder, and electrically conductive additive in the coating film containing the ferrite powder (Nagano, col. 4, ll. 29-42).

However, the Examiner responds that Watase discloses the addition of 10 to 50 % of an electrically conductive filler to its coatings. Therefore, the Examiner argues that it would have been obvious to an ordinary artisan to add amounts of electrically conductive additive in excess of 20 parts per 100 parts

binder to an electrically conductive magnetic coating composition comprising an electrically conductive additive and soft magnetic ferrite powder (AA, p. 12, first full ¶). The problem with the Examiner's conclusion of obviousness is that Watase's coatings admittedly do not include, and do not contemplate including, a soft magnetic ferrite powder in its coatings while Nagano's teaching is directed to coatings that do include a soft magnetic ferrite powder.

Accordingly, it is pure speculation at best, and improper hindsight reconstruction at worst, for the Examiner to allege that persons having ordinary skill in the art would have endeavored to exceed the limits of Nagano's disclosure based on Watase's teaching that coatings which do not contain soft magnetic ferrite powder may include higher and lower amounts of electrically conductive additive. Patentability should never be decided based on speculation, i.e., without any suggestion or motivation to do what Applicant has done and without any reasonable expectation of success. If the differences in the content of an electrically conductive additive in Watase's coating and Nagano's coating would have given the ordinary artisan some thoughts, those thoughts reasonably would be that (1) Watase's coatings are patentably distinct from Nagano's coatings, (2) the component amounts in the one kind of coating cannot be transferred and accepted into the other kind of coating with reasonable expectation of success, and (3) undue experimentation would be required to determine if higher contents of electrically conductive additive than allowed by Nagano could be successfully included in Nagano's coatings

contrary to Nagano's express teaching, with the same beneficial results. Just such undue experimentation by Applicant led to the invention defined by currently appealed Claims 5 and 22-24.

The fact is that Watase's coatings are distinct from Nagano's coatings both in content and function. The Examiner impermissibly reconstructed Applicant's claimed invention using elements from each based on Applicant's disclosure. That is reversible error.

The Examiner has the initial burden to establish a sound factual basis in the prior art for rejecting Applicant's claims under 35 U.S.C. § 103. *See In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988); *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). The burden has not been satisfied in this case. The Examiner's rejections of Claims 5 and 22 should be reversed..

B. Rejections of Claims 23-24 over Watase in view of Nagano

The Examiner further erred in rejecting Claims 23-24 under 35 U.S.C. § 103 over Watase in view of Nagano and Nakao (OA, pp. 19-25). The rejections should be separately considered and reversed.

There is no teaching in Watase to add substantial amounts of a white pigment to its coatings or to apply a layer comprising substantial amounts of a white pigment to its dissipating, electrically conductive, carbon black-containing coatings for any reason. Nakao does not teach adding a white pigment to, or reasonably suggest appling a layer of white pigment over, a heat dissipating layer of the kind Watase discloses comprising a heat dissipating

filler, an electrically conductive filler, and optionally carbon black. Moreover, Nagano expressly limits the total amount of carbon, metal powder, and electrically conductive metal oxide to be added to an electromagnetic wave reflection-preventing resin layer including soft magnetic ferrite powder to less than 20 parts by weight per 100 parts by weight of binder (Nagano, col. 4, ll. 29-31 and 38-42). Therefore, Nagano would have taught the ordinary artisan that one should refrain from adding pigments and other metal powders to, or associating pigments and other metal powders with, an electromagnetic wave reflection-preventing resin layer. In short, the Examiner has not satisfied the PTO's initial burden of proof to establish a satisfactory factual basis for concluding that the subject matter Applicant claims would have been obvious to persons having ordinary skill in the art. To support a conclusion that the resin coated metal sheet defined by Applicant's Claims 23-24 would have been obvious to a person having ordinary skill in the art, the prior art must provide some teaching, suggestion, motivation, or incentive to do what Applicant has done. Obviousness to try or an open invitation to experiment is not sufficient to support a conclusion of obviousness. *KSR International Co. v. Teleflex Inc.*, 550 U.S. at 418-419; *In re Deuel*, 51 F.3d 1552, 1559 (Fed. Cir. 1995).

The Examiner's rejections of Claims 23-24 under 35 U.S.C. § 103 in view of Watase, Nagano, and Nakao should be reversed.

The evidence of record does not support the Examiner's final rejections of Applicant's claims under 35 U.S.C. § 112 and 35 U.S.C. § 103. Accordingly, for the reasons stated herein:

1. The final rejections of Claims 1, 4, 5, 7, 8, and 11-15 under 35 U.S.C. § 112, first paragraph, should be reversed.

2. The final rejections of Claims 1, 4, and 5 under 35 U.S.C. § 112, second paragraph, should be reversed..

3. The final rejections of Claims 1, 4, 7, and 8 under 35 U.S.C. § 103 as obvious over Watase in view of Hosoe should be reversed.

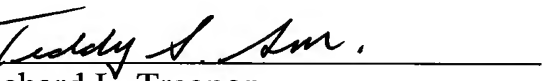
4. The final rejections of Claims 11-15 under 35 U.S.C. § 103 over Watase in view of Hosoe and Nakao should be reversed.

5. The final rejection of Claims 5 and 22 under 35 U.S.C. § 103 over Watase in view of Nagano should be reversed.

6. The final rejections of Claims 23-24 under 35 U.S.C. § 103 over Watase in view of Nagano and Nakao should be reversed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, L.L.P.



Richard L. Treanor
Registration No. 36,379

Teddy S. Gron
Registration No. 63,062

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
www.oblon.com

CLAIMS APPENDIX

Claim 1 (Rejected): A resin coated metal sheet in which an electrically conductive, magnetic coating film containing 20 to 40 mass% of a magnetic powder is coated to a thickness from 3 to 50 μm at least on one surface of a metal sheet, wherein

the magnetic powder is permalloy, and

the magnetic coating film further contains from 20 to 40 mass% of an electrically conductive additive;

wherein the total content of the electrically conducive additive and the magnetic powder contained in the magnetic coating film is 60% or less.

Claims 2-3 (Canceled).

Claim 4 (Rejected): The resin coated metal sheet according to claim 1, wherein a resin constituting the magnetic coating film is a polyester resin.

Claim 5 (Rejected): A resin coated metal sheet in which an electrically conductive, magnetic coating film containing 20 to 40 mass% of a magnetic powder is coated to a thickness from 3 to 15 μm at least on one surface of a metal sheet, wherein

the magnetic powder is soft magnetic ferrite powder, and

the magnetic coating film further contains from 20 to 40 mass% of an electrically conductive additive;

wherein the total content of the electrically conducive additive and the magnetic powder contained in the magnetic coating film is 60% or less.

Claim 6 (Cancelled).

Claim 7 (Rejected): A resin coated metal sheet in which an electrically conductive magnetic coating film containing a magnetic powder is coated to a thickness from 3 to 50 μm at least on one surface of a metal sheet, wherein

the magnetic powder is permalloy, and

the magnetic coating film further contains from 20 to 40 mass% of an electrically conductive additive; and

the resin coated metal sheet satisfies the following (1) or (2) and satisfies the following (3), where

(1) the magnetic coating film described above which is a heat releasing magnetic coating film having a heat releasing property is coated on one surface of the metal sheet and a heat releasing coating film of a thickness of 1 μm or more is coated on another surface of the metal sheet, at least one of the heat releasing magnetic coating film and the heat releasing coating film contains 1 mass% or more of carbon black, and the coating film not containing carbon

black contains 10 mass% or more of heat releasing additives other than carbon black;

(2) the magnetic coating film which is a heat releasing magnetic coating film having a heat releasing property is coated on both surfaces of the metal sheet, the heat releasing magnetic coating film on at least one surface containing 1 mass% or more of carbon black, the coating film not containing carbon black contains 10 mass% or more of heat releasing additives other than carbon black; and

(3) an integrated emissivity of infrared rays (wavelength: 4.5 to 15.4 μm) when heating the resin coated metal sheet to 100°C can satisfy the following formula (1):

$$a \times b \geq 0.42 \quad \ldots \quad \text{formula (1)}$$

where

a is integrated infrared ray emissivity at one surface of the resin coated metal sheet, and

b is integrated infrared ray emissivity at another surface of the resin coated metal sheet.

Claim 8 (Rejected): The resin coated metal sheet according to claim 7, wherein an average particle size of carbon black is from 5 to 100 nm.

Claims 9-10 (Canceled).

Claim 11 (Rejected): A resin coated metal sheet in which an electrically conductive magnetic coating film containing a magnetic powder is coated to a thickness from 3 to 50 μm at least on one surface of a metal sheet, wherein

the magnetic powder is permalloy, and

the magnetic coating film further contains from 20 to 40 mass% of an electrically conductive additive; and

the resin coated metal sheet can satisfy the following (1) or (2) and satisfies the following (3) and (4), where

(1) one surface of the metal sheet is coated with the magnetic coating film, the magnetic coating film selectively containing black additives, and a resin coating film containing at least one of a white pigment and a luster pigment is coated selectively on the magnetic coating film containing the black additives, and

another surface of the metal sheet is coated with a black coating film containing black additives and a resin coating film containing at least one of a white pigment and a luster pigment;

(2) both surfaces of the metal sheet are coated each with the magnetic coating film, the magnetic coating on at least one surface is a black magnetic coating film containing black additives, a resin coating film comprising at least one of a white pigment and a luster pigment is coated on the black magnetic coating film, and another surface is selectively coated with a

resin coating film containing at least one of a white pigment and a luster pigment;

(3) a thickness of each of the resin coating films is from 0.5 to 10 μm and an addition amount of the white pigment and the luster pigment contained in each of the resin coating films is from 1 to 25 mass% in total; and

(4) a color of a resin coated metal sheet with addition of a white pigment and a luster pigment can satisfy an L value from 44.0 to 60.0 as measured by a color difference meter (SZS-Σ90) manufactured by Nippon Denshoku Industries Co., Ltd.

Claim 12 (Rejected): The resin coated metal sheet according to claim 11, wherein at least one of the white pigment and the luster pigment contained in the resin film is an oxide pigment.

Claim 13 (Rejected): The resin coated metal sheet according to claim 11, wherein at least one of the white pigment and the luster pigment contains titanium oxide.

Claim 14 (Rejected): A resin coated metal sheet in which an electrically conductive magnetic coating film containing a magnetic powder is coated to a thickness from 3 to 50 μm at least on one surface of a metal sheet, wherein

the magnetic powder is permalloy, and

the magnetic coating film further contains from 20 to 40 mass% of an electrically conductive additive; and

the resin coated metal sheet can satisfy the following (1) or (2) and satisfies the following (3) to (5), where

(1) one surface of the metal sheet is coated with the magnetic coating film which is a heat releasing magnetic coating film having a heat releasing property, the heat releasing magnetic coating film selectively contains black additives and, a resin coating film containing at least one of a white pigment and a luster pigment is further coated selectively, another surface of the metal sheet is coated with a heat releasing coating film of 1 μm or more and a resin coating film containing at least one of a white pigment and a luster pigment, at least one of the heat releasing magnetic coating film and the heat releasing coating film contains 1 mass% or more of carbon black, and a surface not containing carbon black contains 10 mass% or more of heat releasing additives;

(2) both surfaces of the metal sheet are coated with the magnetic coating film which is a heat releasing magnetic coating film having a heat releasing property, at least one surface of the heat releasing magnetic coating film contains 1 mass% or more of carbon black, and a surface not containing carbon black contains 10 mass% or more of heat releasing additives, and a resin coating film containing at least one of a white pigment and a luster pigment is

coated further over the heat releasing magnetic coating film on at least one surface;

(3) an integrated emissivity of infrared rays (wavelength: 4.5 to 15.4 μm) when heating the resin coated metal sheet to 100°C can satisfy the following formula (1):

$$a \times b \geq 0.42 \quad \ldots \quad \text{formula (1)}$$

where

a is integrated infrared ray emissivity at one surface of the resin coated metal sheet, and

b is integrated infrared ray emissivity at another surface of the resin coated metal sheet;

(4) a thickness of the resin coating film is from 0.5 to 10 μm, and an addition amount of the white pigment and the luster pigment contained in the resin coating film is from 1 to 25 mass% in total; and

(5) a color of a resin coated metal sheet with addition of a white pigment and a luster pigment can satisfy an L value from 44.0 to 60.0 as measured by a color difference meter (SZS-Σ90) manufactured by Nippon Denshoku Industries Co., Ltd.

Claim 15 (Rejected): The resin coated metal sheet according to claim 14, wherein an average particle size of the carbon black is from 5 to 100 nm.

Claims 16-21 (Canceled).

Claim 22 (Rejected): A resin coated metal sheet in which an electrically conductive magnetic coating film containing a magnetic powder is coated to a thickness from 3 to 15 μm at least on one surface of a metal sheet, wherein

the magnetic powder is soft magnetic ferrite powder;

the magnetic coating film further contains from 20 to 40 mass% of an electrically conductive additive; and

the resin coated metal sheet satisfies the following (1) or (2) and satisfies the following (3), where

(1) the magnetic coating film described above which is a heat releasing magnetic coating film having a heat releasing property is coated on one surface of the metal sheet and a heat releasing coating film of a thickness of 1 μm or more is coated on another surface of the metal sheet, at least one of the heat releasing magnetic coating film and the heat releasing coating film contains 1 mass% or more of carbon black, and the coating film not containing carbon black contains 10 mass% or more of heat releasing additives other than carbon black;

(2) the magnetic coating film which is a heat releasing magnetic coating film having a heat releasing property is coated on both surfaces of the metal sheet, the heat releasing magnetic coating film on at least one surface containing 1 mass% or more of carbon black, the coating film not containing

carbon black contains 10 mass% or more of heat releasing additives other than carbon black; and

(3) an integrated emissivity of infrared rays (wavelength: 4.5 to 15.4 μm) when heating the resin coated metal sheet to 100°C can satisfy the following formula (1):

$$a \times b \geq 0.42 \quad \ldots \quad \text{formula (1)}$$

where

a is integrated infrared ray emissivity at one surface of the resin coated metal sheet, and

b is integrated infrared ray emissivity at another surface of the resin coated metal sheet.

Claim 23 (Rejected): A resin coated metal sheet in which an electrically conductive magnetic coating film containing a magnetic powder is coated to a thickness from 3 to 15 μm at least on one surface of a metal sheet, wherein

the magnetic powder is soft magnetic ferrite powder;

the magnetic coating film further contains from 20 to 40 mass% of an electrically conductive additive; and

the resin coated metal sheet can satisfy the following (1) or (2) and satisfies the following (3) and (4), where

(1) one surface of the metal sheet is coated with the magnetic coating film, the magnetic coating film selectively containing black additives,

and a resin coating film containing at least one of a white pigment and a luster pigment is coated selectively on the magnetic coating film containing the black additives, and

another surface of the metal sheet is coated with a black coating film containing black additives and a resin coating film containing at least one of a white pigment and a luster pigment;

(2) both surfaces of the metal sheet are coated each with the magnetic coating film, the magnetic coating on at least one surface is a black magnetic coating film containing black additives, a resin coating film comprising at least one of a white pigment and a luster pigment is coated on the black magnetic coating film, and another surface is selectively coated with a resin coating film containing at least one of a white pigment and a luster pigment;

(3) a thickness of each of the resin coating films is from 0.5 to 10 μm and an addition amount of the white pigment and the luster pigment contained in each of the resin coating films is from 1 to 25 mass% in total; and

(4) a color of a resin coated metal sheet with addition of a white pigment and a luster pigment can satisfy an L value from 44.0 to 60.0 as measured by a color difference meter (SZS-Σ90) manufactured by Nippon Denshoku Industries Co., Ltd.

Claim 24 (Rejected): A resin coated metal sheet in which an electrically conductive magnetic coating film containing a magnetic powder is coated to a thickness from 3 to 15 μm at least on one surface of a metal sheet, wherein

the magnetic powder is soft magnetic ferrite powder;

the magnetic coating film further contains from 20 to 40 mass% of an electrically conductive additive; and

the resin coated metal sheet can satisfy the following (1) or (2) and satisfies the following (3) to (5), where

(1) one surface of the metal sheet is coated with the magnetic coating film which is a heat releasing magnetic coating film having a heat releasing property, the heat releasing magnetic coating film selectively contains black additives and, a resin coating film containing at least one of a white pigment and a luster pigment is further coated selectively, another surface of the metal sheet is coated with a heat releasing coating film of 1 μm or more and a resin coating film containing at least one of a white pigment and a luster pigment, at least one of the heat releasing magnetic coating film and the heat releasing coating film contains 1 mass% or more of carbon black, and a surface not containing carbon black contains 10 mass% or more of heat releasing additives;

(2) both surfaces of the metal sheet are coated with the magnetic coating film which is a heat releasing magnetic coating film having a heat releasing property, at least one surface of the heat releasing magnetic coating

film contains 1 mass% or more of carbon black, and a surface not containing carbon black contains 10 mass% or more of heat releasing additives, and a resin coating film containing at least one of a white pigment and a luster pigment is coated further over the heat releasing magnetic coating film on at least one surface;

(3) an integrated emissivity of infrared rays (wavelength: 4.5 to 15.4 μm) when heating the resin coated metal sheet to 100°C can satisfy the following formula (1):

$$a \times b \geq 0.42 \quad \ldots \quad \text{formula (1)}$$

where

a is integrated infrared ray emissivity at one surface of the resin coated metal sheet, and

b is integrated infrared ray emissivity at another surface of the resin coated metal sheet;

(4) a thickness of the resin coating film is from 0.5 to 10 μm, and an addition amount of the white pigment and the luster pigment contained in the resin coating film is from 1 to 25 mass% in total; and

(5) a color of a resin coated metal sheet with addition of a white pigment and a luster pigment can satisfy an L value from 44.0 to 60.0 as measured by a color difference meter (SZS-Σ90) manufactured by Nippon Denshoku Industries Co., Ltd.

EVIDENCE APPENDIX

Affidavits and Declarations

No evidence in the form of an affidavit or declaration is relied upon in support of the findings and arguments in this appeal.

Other Evidence

Ex parte SUSUMU TANAKA and Yasuo Murakami, Appeal 2007-3845, decided March 28, 2008 (copy attached).

No other evidence is relied upon in support of the findings and arguments in this appeal.

RELATED PROCEEDINGS APPENDIX

Appellant/Applicant, Appellant/Applicant's legal representatives, and Appellant/Applicant's assignees, are aware of no appeals, interferences, or judicial proceedings that are related to, directly affect or would be directly affected by, or have a bearing on the decision of the Board in this appeal.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SUSUMU TANAKA and YASUO MURAKAMI

Appeal 2007-3845
Application 11/138,413
Technology Center 1700

Decided: March 28, 2008

Before CHUNG K. PAK, THOMAS A. WALTZ, and
JEFFREY T. SMITH, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

Statement of the Case

This is an appeal under 35 U.S.C. § 134 from a final rejection of claims 1 and 2. We have jurisdiction under 35 U.S.C. § 6.

---

[1] An oral hearing for this appeal was held on March 12, 2008.

Appellants' invention relates to a rolling bearing that can be used in engine auxiliaries and gas heat pumps. (Spec. 1). An understanding of Appellants' invention can be gleaned from independent claim 1, which appears below:

> 1. A rolling bearing comprising:
>
> an inner ring and an outer ring; and a plurality of rolling elements rollably disposed between the inner ring and the outer ring,
>
> wherein at least one of the inner ring and the outer ring being made of steel, the steel including:
>
> carbon in the range of 0.95 to 1.25% by mass;
>
> silicon in the range of 0.7 to 2.5% by mass;
>
> manganese in the range of 0.1 to 1.5% by mass;
>
> chromium in the range of 0.5 to 3.0% by mass;
>
> molybdenum of 1.5% by mass or less;
>
> oxygen of 9 ppm or less;
>
> titanium of 30 ppm or less;
>
> sulfur of 80 ppm or less;
>
> rating number of Thin A series inclusion of 1.5 or less and rating number of Heavy A series inclusion of 1.0 or less,
>
> wherein the rating numbers are measured by a method stipulated in ASTM E45,
>
> and
>
> wherein hardness of the inner ring and the outer ring are HRC 59 or more.

The Examiner relies on the following reference in rejecting the appealed subject matter:

Yasunaga (JP '740) (as translated) JP 409087740 A Mar. 31, 1997

Claims 1 and 2 stand rejected under 35 U.S.C. § 103(a) over JP '740.

We REVERSE.

The Examiner bears the initial burden of presenting a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). In order to establish a prima facie case of obviousness, the Examiner must show that each and every limitation of the claim is described or suggested by the prior art or would have been obvious based on the knowledge of those of ordinary skill in the art. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988). "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (*quoted with approval in KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007)).

The Examiner has not established obviousness in this case. Upon consideration of the record as a whole in light of Appellants' contentions, we agree with Appellants that elements constituting a "teaching away" from the claimed invention are present in JP '740. *See, e.g.*, *Kahn*, 441 F.3d at 985-86 ("A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." (Quoting *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994))).

The invention of JP '740, like Appellants' invention, relates to a high -carbon-chromium bearing parts comprising steel of SU J2 grade. The bearing parts can be used in engine auxiliaries and gas heat pumps. (JP '740, [0002]). JP '740 discloses, in the conventional manufacturing process,

spheroidizing annealing is performed requiring a lot of energy and time. (JP '740, [0003]). JP '740 discloses when spheroidizing annealing is simplified or omitted bearing properties such as cold workability and rolling fatigue ability fall. (JP '740, [0004]). As such, the object of JP '740 is to provide a method of efficiently manufacturing bearing parts equipped with bearing properties, such as good cold workability, machinability and extended rolling fatigue life. (JP '740, [0006]). To achieve this objective, JP '740 describes a manufacturing method for bearing parts excellent in cold workability and satisfies the specified surface hardness characteristic. (JP '740, [0007]). This manufacturing method requires, *inter alia*, utilizing steel comprising carbon in the range of 0.5 to 0.9%. (JP '740, [0007]). Regarding the amount of carbon present, JP '740 states:

> C: 0.5 - 0.9%C is an element required to secure bearing properties, such as rolling fatigability, while obtaining 58 or more hardness (HRC) after hardening / annealing. The content of C cannot demonstrate such an operation effectively at less than 0.5%. A desirable lower limit is 0.7%. However, since cold workability and machinability will fall if added in excess, the upper limit is made into 0.9%.
> (JP '740 [0012])

The Examiner recognizes that JP '740 teaches a steel alloy having 0.5%-.9% C. However, relying on MPEP §2144.05 and *Titanium Metal Corp. of America v. Banner*, 778, F.2d 775 (Fed Cir. 1985), the Examiner then asserts that the 0.9% C is close enough to the claimed 0.95% carbon that there is prima facie obviousness. However, as discussed above, JP '740 teaches a carbon content which is entirely outside of the claimed range and specifically warns against exceeding the upper limitation of 0.9% C due to the materially different property expected by one of ordinary skill in the art .

In the other words, contrary to the Examiner's assertion, JP '740 teaches that the inclusion of greater than 0.9% carbon does not expect to produce a steel alloy having *the same properties* as a steel alloy having 0.5% to 0.9% carbon as required by *Titanium Metal Corp. of America*. As such, a person of ordinary skill in the art following the teachings of JP '740 would not have been motivated to utilize steel comprising carbon exceeding the upper limitation of 0.9% in the disclosed method. Therefore, we agree with Appellants that prima facie obviousness has not been established on the present record (Br. 8-9). The Examiner has failed to rely upon other prior art references that are not concerned with the cold workability and machinability of the components utilized in the method.

The Examiner has not adequately addressed the suitability of modifying the prior art to achieve the claimed invention.

ORDER

The Examiner's decision rejecting claims 1 and 2 is reversed.

REVERSED

tf/ls

SUGHRUE-265550
2100 PENNSYLVANIA AVE. NW
WASHINGTON, DC 20037-3213